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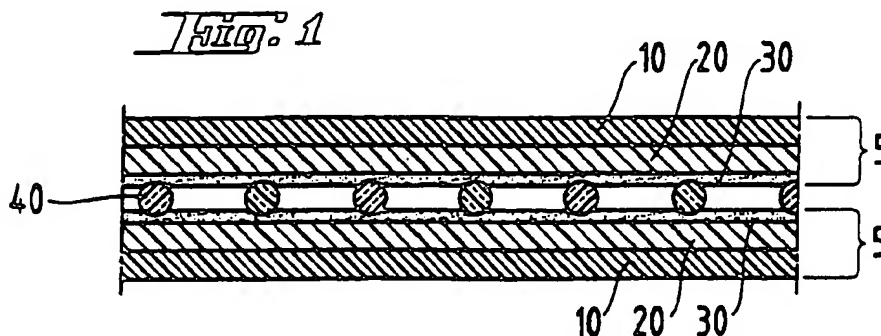
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(54) Optical device with compressible laminate

(57) The invention relates to an optical device with a first laminate (5) and a second laminate (5) between which is disposed a first plurality of optical components (40) arranged in a first plane, wherein at least one of the first laminate (5) or the second laminate (5) comprises a first layer (10) having high mechanical strength, a second layer (20) having high compressibility. Preferably the laminate further comprises fixation means (30) for affixing the optical components (40). More preferably the fixation means is an adhesive layer. The first layer (10) has

a tensile strength of 8000-15000 psi and the second layer (20) has a density between 0.6 g/cm³ and 1.8 g/cm³. Preferably the second layer is made from expanded PTFE. The adhesive layer (30) is either a pressure-sensitive adhesive or is selected from the group of adhesives having the properties that it is tacky at room temperature and pressure and hardens at a temperature between 50°C and 100°C.



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EUROPEAN SEARCH REPORT

Application Number
EP 97 11 0755

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 639 042 A (JAPAN GORE TEX INC) 15 February 1995 * column 3, line 28 - column 11, line 11; figures 1-4; examples 2,3 *	1-3, 10-20	G02B6/36 B32B31/00 B32B3/18
X	US 4 443 657 A (HILL RONALD A ET AL) 17 April 1984 * column 1, line 57 - column 5, line 57; figures 1-4 *	1,11-14, 21	
D,A	US 5 292 390 A (BURACK JOHN J ET AL) 8 March 1994 * column 2, line 45 - column 4, line 38; figures 1,2 *	1-4, 15-17, 21-23	
A	US 4 537 469 A (KIRCHER HARTMANN J) 27 August 1985 * column 2, line 49 - column 4, line 13; figure 2 *	1,4-10, 21-23	
A	US 4 138 193 A (OLSZEWSKI JERZY A ET AL) 6 February 1979 * column 2, line 3 - column 3, line 23; figures 1,2 *	1-3,10, 15-23	TECHNICAL FIELDS SEARCHED (Int.Cl.6) B32B G02B H01B
A	EP 0 307 123 A (JAPAN GORE TEX INC) 15 March 1989 * figure 4; examples 1,2 *	5-7	
A	EP 0 535 471 A (JAPAN GORE TEX INC) 7 April 1993 * column 2, line 16 - column 3, line 38 *	2,3, 15-20	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 April 1999	Examiner THEOPISTOU, P
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 97 11 0755

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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29-04-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0639042 A	15-02-1995	JP 7022741 A	24-01-1995
		DE 69410188 D	18-06-1998
		DE 69410188 T	03-09-1998
		US 5473118 A	05-12-1995
US 4443657 A	17-04-1984	DE 3020622 A	10-12-1981
		AT 9418 T	15-09-1984
		DE 3050943 C	24-07-1986
		EP 0041097 A	09-12-1981
		JP 57053007 A	29-03-1982
US 5292390 A	08-03-1994	JP 2807403 B	08-10-1998
		JP 6265763 A	22-09-1994
US 4537469 A	27-08-1985	NONE	
US 4138193 A	06-02-1979	NONE	
EP 0307123 A	15-03-1989	JP 1069341 A	15-03-1989
		JP 2559236 B	04-12-1996
		AT 94576 T	15-10-1993
		AU 600585 B	16-08-1990
		CA 1294864 A	28-01-1992
		DE 3884114 D	21-10-1993
		DE 3884114 T	27-01-1994
		GB 2209707 A	24-05-1989
EP 0535471 A	07-04-1993	US 4916017 A	10-04-1990
		JP 5084861 A	06-04-1993
		DE 69203067 D	27-07-1995
		DE 69203067 T	19-10-1995
		US 5294487 A	15-03-1994